

Groundwater drought in arid regions needs more research on both water quantity and quality, better models, and adaptive solutions to mitigate its environmental, social, and economic impacts.

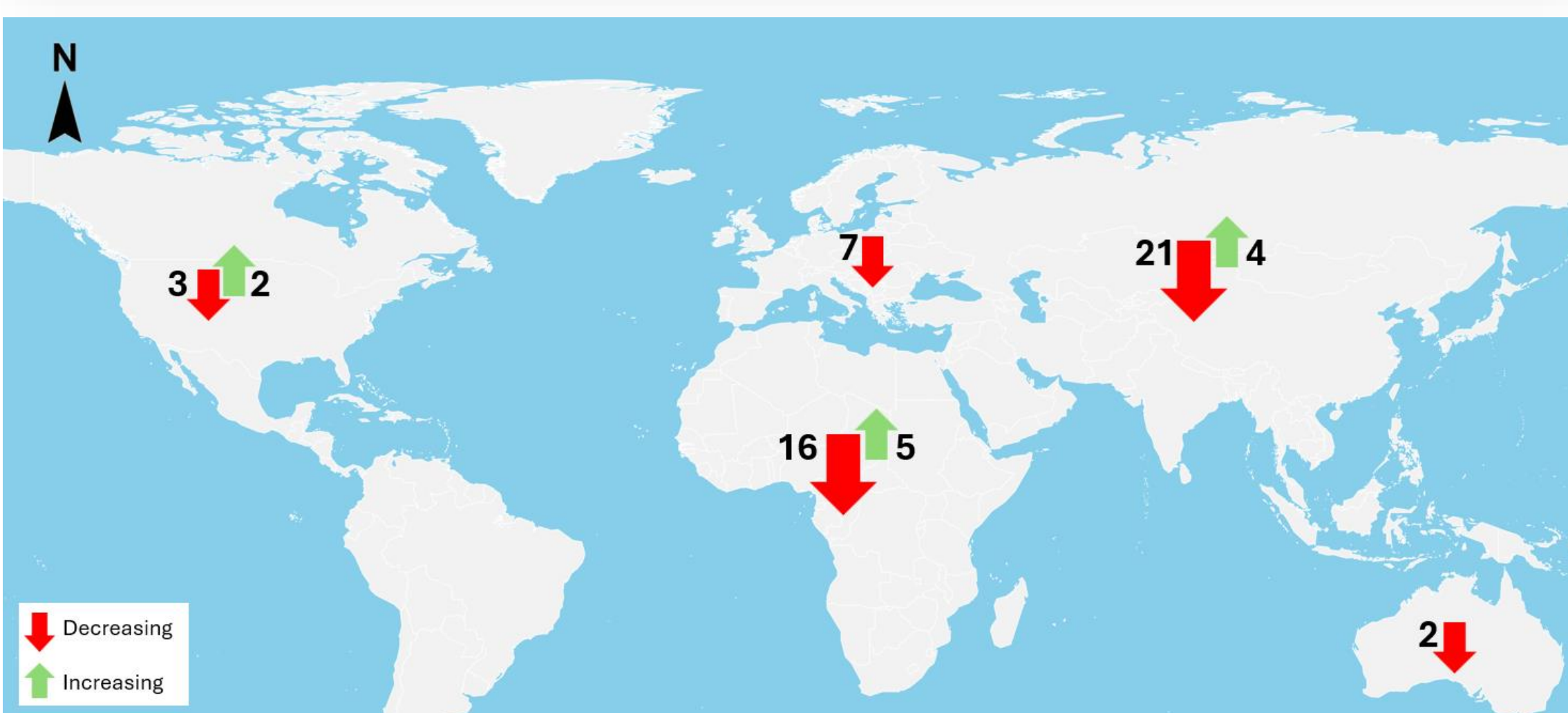
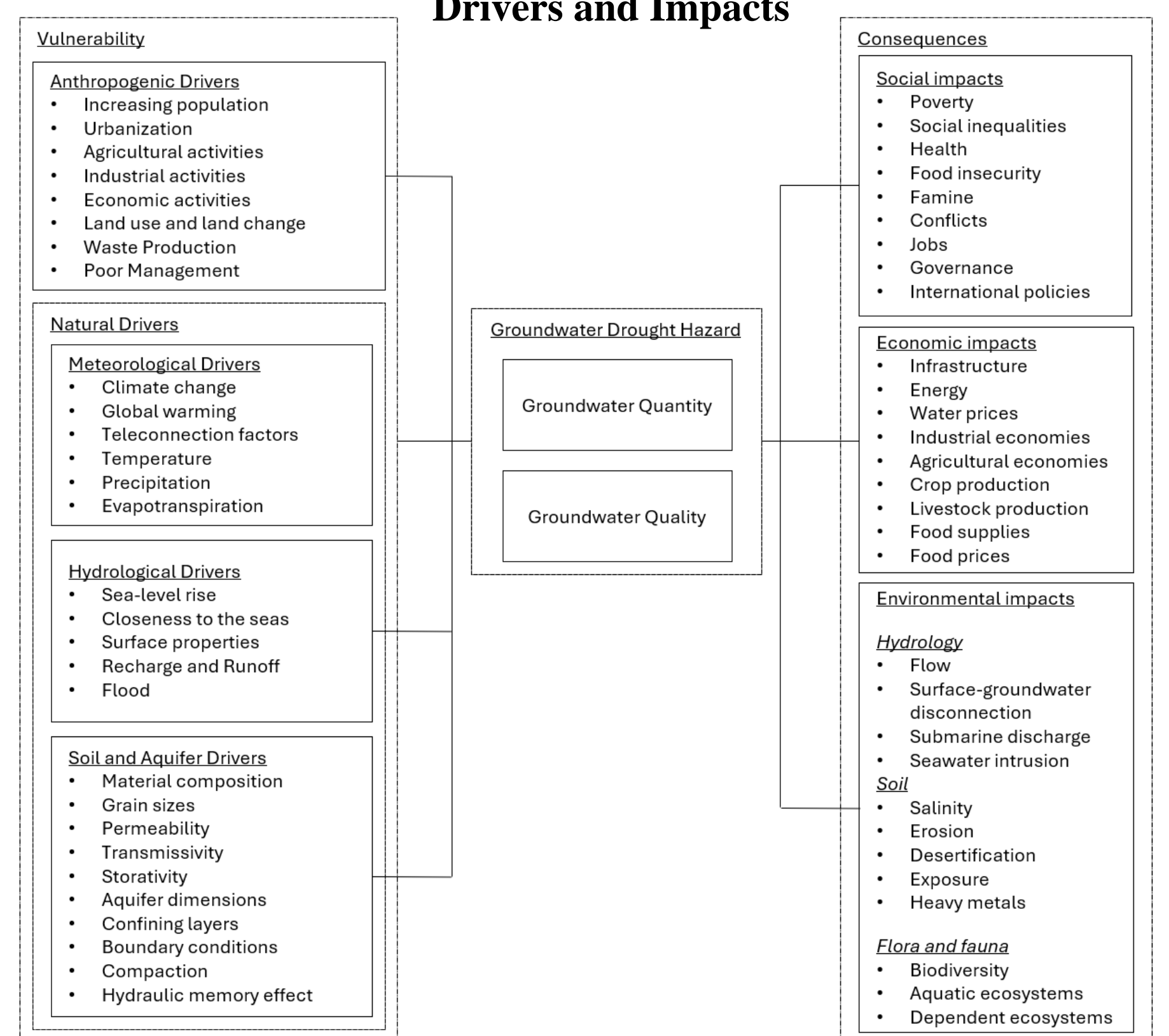
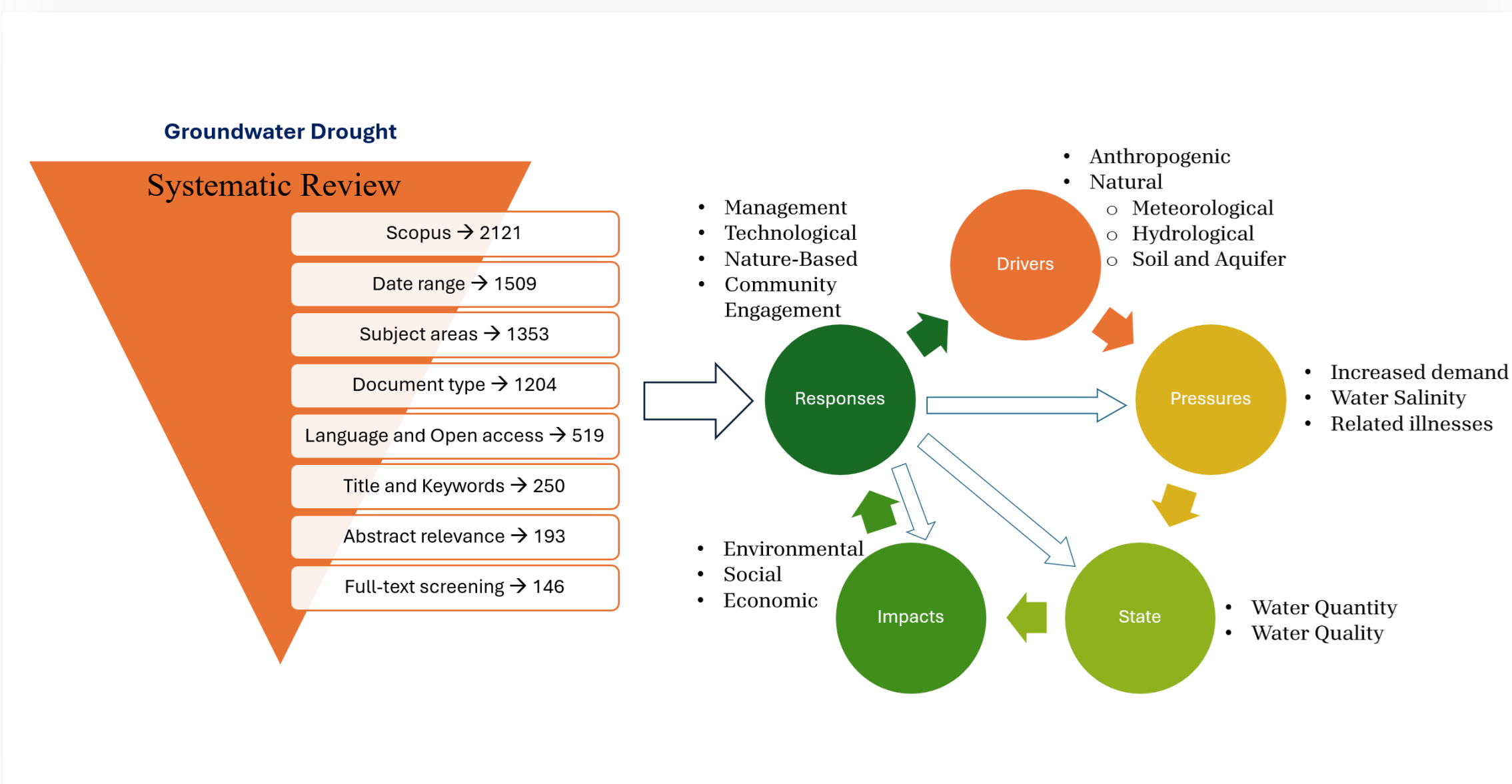
A Review of Groundwater Drought Assessment and Mitigation Practices in Arid and Semi-Arid Lands

Background: Groundwater drought is “the inability to harness groundwater resources within a particular spatial and temporal framework, arising either from the degradation of water quality or quantity”. Groundwater is essential for meeting human and ecosystem water demands, especially in drylands, covering 40% of the Earth's surface and supporting over two billion people, acting as a buffer when water is scarce.

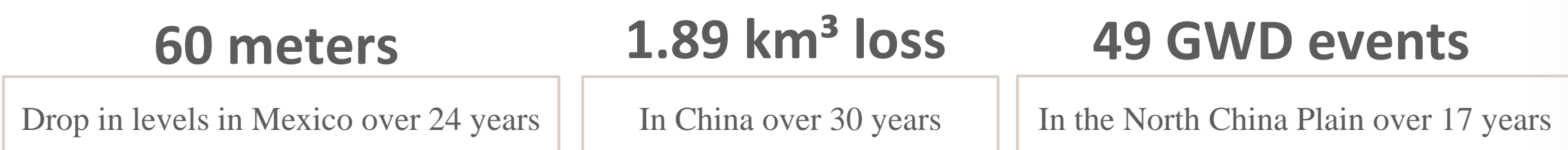
Methods

Systematic Review

DPSIR



Global Groundwater Level Trends, number of assessment studies.



Call to Action: Policymakers can prioritize sustainability research, foster international collaboration, and invest in technology like AI and remote sensing for groundwater management. Promote nature-based solutions, strengthen institutional capacity, and enhance community engagement to ensure long-term water resource security.

